

REMARKS

Claims 5, 9 and 29-35 were examined and reported in the Office Action. Claims 5, 9 and 29-35 are rejected. Claim 5 is amended. Claims 1, 5 and 8-35 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. 35 U.S.C. § 103

A. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,869,208 issued to Miyasaka ("Miyasaka "), in view of U.S. Patent No. 7,101,642 issued to Tsukamoto ("Tsukamoto"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2142

“[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.” (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).” “*All words in a claim must be considered in judging the patentability of that claim against the prior art.*” (In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant's claim 5 contains the limitations of

[a] method of making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, Ga, Ge, Ca, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 0.01 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13:

- Li_xMnA_2 (1)
- $\text{Li}_x\text{MnO}_{2-z}\text{A}_z$ (2)
- $\text{Li}_x\text{Mn}_{1-y}\text{M}'_y\text{A}_2$ (3)
- $\text{Li}_x\text{Mn}_2\text{A}_4$ (4)
- $\text{Li}_x\text{Mn}_2\text{O}_{4-z}\text{A}_z$ (5)
- $\text{Li}_x\text{Mn}_{2-y}\text{M}'_y\text{A}_4$ (6)
- Li_xBA_2 (7)
- $\text{Li}_x\text{BO}_{2-z}\text{A}_z$ (8)
- $\text{Li}_x\text{B}_{1-y}\text{M}'_y\text{A}_2$ (9)
- $\text{Li}_x\text{B}_{1-y}\text{M}''_y\text{O}_{2-z}\text{A}_z$ (10)
- $\text{Li}_x\text{NiCoA}_2$ (11)
- $\text{Li}_x\text{NiCoO}_{2-z}\text{A}_z$ (12)
- $\text{Li}_x\text{Ni}_{1-y-z}\text{Co}_y\text{M}''_z\text{A}_2$ (13)

where $1.0 \leq x \leq 1.1$, $0.01 \leq y \leq 0.1$, $0.01 \leq z \leq 0.5$, M' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Co, Mg, La, Ce, Sr and V, M'' is at least one transition metal or lanthanide metal selected from the group consisting of Al, Cr, Mn, Fe, Mg, La, Ce, Sr and V, A is selected from O, F, S or P, and B is Ni or Co.

Miyasaka discloses a lithium ion secondary battery. It is asserted in the Office Action that Miyasaka is silent regarding the additive being at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba. Applicant agrees. Applicant has amended claim 5 regarding the additive.

Tsukamoto discloses a lithium ion battery that discharges very low voltage. It is asserted in the Office Action that Tsukamoto discloses Mg as an additive. Applicant's amended claim 5

contains the limitations of “making a rechargeable lithium battery comprising: forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, Ga, Ge, Ca, Sr and Ba.” Nowhere in Tsukamoto, however, is it taught, disclosed, or suggested that the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba. Further, Applicant’s additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode.

Neither Miyasaka, Tsukamoto, and therefore, nor the combination of the two, teach, disclose or suggest the limitations contained in Applicant’s amended claim 5, as listed above. Since neither Miyasaka, Tsukamoto, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant’s amended claim 5, Applicant’s amended claim 5 is not obvious over Miyasaka in view of Tsukamoto since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from amended claim 5, namely claims 29-30 and 33-34, would also not be obvious over Miyasaka in view of Tsukamoto for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claims 5, 29-30 and 33-34 is respectfully requested.

B. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,851,696 issued to Saidi et al. (“Saidi”), in view of Tsukamoto. Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant has addressed Tsukamoto regarding claims 5, 29-30 and 33-34 above in section I(A).

Saidi discloses an electrochemical cell having a nonmetal negative electrode without using any solid metal active material.

Therefore, even if Saidi were combined with Tsukamoto, the resulting method would still not teach, disclose or suggest the limitations contained in Applicant’s claim 5 of “the additive is

at least one of Si, Ga, Ge, Ca, Sr and Ba,” where the additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode. Since neither Saidi, Tsukamoto, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Saidi in view of Tsukamoto since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly depend from claim 5, namely claims 29-30 and 33-34, would also not be obvious over Saidi in view of Tsukamoto for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claims 5, 29-30 and 33-34 is respectfully requested.

C. It is asserted in the Office Action that claim 35 is rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Saidi, in view of Tsukamoto and further in view of U. S. Publication No. 2001/0010807 by Matsubara (“Matsubara”). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant's claim 35 is directly dependent on amended claim 5. Applicant has addressed Saidi and Tsukamoto regarding claim 5 above in section I(B).

Matsubara discloses a lithium/nickel/cobalt composite positive active material for a secondary battery. Matsubara, however, does not teach, disclose or suggest the limitations contained in Applicant's claim 5 of “the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba,” where the additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode. Therefore, even if Saidi were combined with Tsukamoto and Matsubara, the resulting method would still not teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since neither Saidi, Tsukamoto, Matsubara, and therefore, nor the combination of the three, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Saidi in view of Tsukamoto and Matsubara since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claim that directly depends

from claim 5, namely claim 35, would also not be obvious over Saidi in view of Tsukamoto and Matsubara for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claim 35 is respectfully requested.

D. It is asserted in the Office Action that claims 5, 9 and 29-32 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 6,589,694 issued to Gosho et al. ("Gosho") and further in view of Tsukamoto. Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant has addressed Tsukamoto regarding claims 5, 29-30 and 33-34 above in section I(A).

Gosho discloses a positive electrode active material, a negative electrode active material and an electrolyte used in a non-aqueous secondary battery. Gosho, however, does not teach, suggest or disclose the limitations contained in Applicant's claim 5 of "the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba," where the additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode. Therefore, even if Gosho were combined with Tsukamoto, the resulting method would still not teach, disclose or suggest all the limitations contained in Applicant's claim 5, as listed above. Since neither Gosho, Tsukamoto, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, Applicant's claim 5 is not obvious over Gosho in view of Tsukamoto since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from claim 5, namely claims 9 and 29-32, would also not be obvious over Gosho in view of Tsukamoto for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 5, 9 and 29-32 are respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that claims 1, 5 and 8-35 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below to the United States Patent and Trademark Office.


Jean Svoboda

Date: March 21, 2007